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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,082	03/26/2004	Robert L. Doss JR.	02-1757	8219

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EXAMINER

BRINEY III, WALTER F

ART UNIT PAPER NUMBER

2644

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/810,082

Applicant(s)

DOSS ET AL

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naddell et al. (US Patent 5,450,618) in view of Arnaud (US Patent Re. 36,934).**

**Claim 1** is limited to *a telephone system*. Naddell discloses a full duplex and half duplex communication unit with volume setting. See Abstract thereof. The communication unit of Naddell includes a rotary switch (202) as seen in figure 2. The state of the switch indicates the communication mode of the communication unit as seen in figure 4. Specifically, when the button is depressed, the unit is in a low-gain full-duplex mode. Conversely, the button's second state indicates a loud-speaking half-duplex mode. In addition, the angular position of the switch indicates a desired loud-speaking volume. See column 2, lines 39-52.

With respect to the claims, the communication unit of Naddell clearly includes a *receiver* (301) for receiving *signals* and an associated amplifier (302), i.e. *a receiver in communication with a receive signal path, the receiver having associated therewith a receiver gain*. While not shown, the device inherently comprises a *transmitter* that allows a user of the communication unit to transmit their voice signals to a remotely located user. The unit as shown in figure 3 includes a processor (307). This processor

Art Unit: 2644

receives the volume selector (305) and mode selector (306) inputs and determines the audio level, as such, the processor corresponds to a receiver gain detector configured to detect the receiver gain. All acoustic telephones have a degree of receiver gain stability inherently; as such the unit of Naddell includes a *receiver stability level*. As just stated with respect to the processor, the processor includes selector input determining means as well as control means used for adjusting an audio level, i.e. *a controller in communication with the receiver gain detector*. As can be appreciated from figure 4, the communication unit is operated in a full-duplex mode when the receiver level is set to a low-gain setting, i.e. *when the receiver gain is approximately less than the receiver stability level*, and is conversely operated in a half-duplex mode when the receiver level is set to a high-gain setting, i.e. *when the receiver gain is approximately above the receiver stability level*. At this point, it is clear that Naddell anticipates all above limitations of the claim, however, Naddell fails to disclose the details of the half-duplex mode and, hence, a controlling scheme thereof. Therefore, Naddell anticipates all limitations of the claim with the exception wherein *the adaptive duplex mode being such that an adaptive attenuation level alternately applied on the receive signal and transmit signal paths is dependent upon the level by which the receiver gain exceeds the receiver stability level*.

As is well known in the art, when a telephone is operated in a handsfree mode, high-gain received signals can acoustically couple with the transmitter and cause oscillations. These oscillations can be mitigated by maintaining the transceiving loop's gain to a value less than or equal to unity. Since the communication unit of Naddell

Art Unit: 2644

does not disclose the circuitry used to provide this protection, one of ordinary skill in the art would have simply used another prior art teaching to provide this functionality. One example is the control device for a hands-free telephone set as taught by Arnaud. See Abstract thereof. The device as taught by Arnaud is of particular relevance to the unit of Naddell because it provisions loop stability even with a user-selected volume setting, symbolized by amplifier (GL) and gain (dGL) of figure 2; also see equations 2 and 3 of column 4. As such, the gain of devices (ATR) and (ATE) are set in accordance with the value of (dGL) in order to maintain a predetermined loop gain, i.e. *an adaptive attenuation level...is dependent upon the level by which the receiver gain exceeds the receiver stability level*. See column 4, lines 23-26. Note, since the half-duplex mode of Naddell is only activated upon a high-gain mode, it is assumed herein that all values of dGL represent the gain level above the *receiver stability level*.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide loop stability control as taught by Arnaud because first, the communication unit of Naddell requires such a prior art teaching; and second, the system of Arnaud compensates for user selectable volume settings as is clearly a mainstay of the unit of Naddell.

**Claim 2** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. As shown in the rejection of claim 1, Arnaud teaches applying an attenuation factor dA as linear function of dGL, i.e. *wherein the attenuation level...is approximately equal to the level by which the receiver gain exceeds the receiver*

Art Unit: 2644

*stability level*. See column 4, equation 3. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 3** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. With respect to Naddell, the method of figure 4 includes a feedback path from steps (405) and (408) that clearly indicate that gain monitoring occurs over an entire conversation. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 4** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. As seen in figure 3 of Naddell, the system includes a volume selector (305), i.e. *a volume setting*, and a mode selector (306), i.e. *a boost function*. As shown in the rejection of claim 1, the mode selector selects between the full and half-duplex modes, while the volume selector modifies the switched attenuation in accordance with the teachings of Arnaud, i.e. *wherein the receiver gain is a function of the volume setting and the status of the boost function*. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 5** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. As explained in column 4, lines 40-55 of Arnaud, selective attenuation is applied to a non-active channel, such that during *an active receive mode the controller applies the adaptive attenuation level on the transmit signal path* and during *an active transmit mode the controller applies the adaptive attenuation level on the receive signal path*. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 6** is limited to *the telephone system of claim 5*, as covered by Naddell in view of Arnaud. Clearly, a detector is inherently present in the system of Arnaud to enable active path detection. An exemplary detector is depicted in figure 4 thereof. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 7** is limited to *the telephone system of claim 6*, as covered by Naddell in view of Arnaud. As seen in figure 4, the transmit signal less noise (VE) is compared against threshold (VR) to determine which signal channel is active. When (VE) exceeds (VR), the transmit signal is active. See column 6, line 60 through column 7, line 47. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 8** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. The communication unit of Naddell does not disclose any type of attenuation in the full-duplex mode as the chance of oscillating is essentially eliminated due to the preset low gain of the speaker in the full-duplex mode. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claim 9** is limited to *the telephone system of claim 1*, as covered by Naddell in view of Arnaud. While not explicitly disclosed by either Naddell or Arnaud, the intrinsic receiver stability level is a physical parameter determined by the orientation and distance apart of the loudspeaker and microphone of a telephone set. The typical telephone is limited to about 30 and 35 dB of gain as is acknowledged by the applicant. As such, the recitation of the receiver stability level residing approximately between 30 and 35 dB of gain is inherent. Therefore, Naddell in view of Arnaud makes obvious all limitations of the claim.

**Claims 10-18** are limited to essentially the same subject matter as claims 1-9, as covered by Naddell in view of Arnaud, respectively, and are rejected for the same reasons.

**Claims 19-27** are limited to essentially the same subject matter as claims 1-9, as covered by Naddell in view of Arnaud, respectively, and are rejected for the same reasons.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Application/Control Number: 10/810,082  
Art Unit: 2644

Page 8



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**SUPERVISORY PATENT EXAMINER**

WFB  
4/15/05